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# Public Health Nursing and the Community: Partnering to Improve Health By Improving the Environment

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PUBLIC HEALTH NURSING AND THE COMMUNITY: PARTNERING TO IMPROVE  
HEALTH BY IMPROVING THE ENVIRONMENT

ANNA HAUBRICH

Submitted in partial fulfillment of the  
Requirement for the degree of  
Master of Arts in Nursing

AUGSBURG COLLEGE  
MINNEAPOLIS, MINNESOTA  
2011

**Augsburg College  
Department of Nursing  
Master of Arts in Nursing Program  
Thesis or Graduate Project Approval Form**

This is to certify that **Anna Haubrich** has successfully defended her Graduate Project entitled "**Public Health Nursing and Healthy Homes: A Community Participatory Action Research Project Based on the Work of Florence Nightingale**" and fulfilled the requirements for the Master of Arts in Nursing degree.

Date of Oral defense **June 14, 2011.**

**Committee member signatures:**

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Reader 1: Katherine Baumgardner Date July 15, 2011

Reader 2: Joan Brandt Date \_\_\_\_\_

## ABSTRACT

### PUBLIC HEALTH NURSE AND COMMUNITY PARTNERSHIP: IMPROVING HEALTH BY IMPROVING ENVIRONMENT

ANNA HAUBRICH

JULY 11TH, 2011

  X   Field Project

#### Abstract

Florence Nightingale wrote that the environment is the single most important factor to a person's health. This paper discusses the process of bringing public health nursing together with community members to implement a Healthy Homes primary prevention project that improves the environment for people living in the Rondo Neighborhood of Saint Paul. The Rondo Neighborhood has a high ratio of low-income people. People living in lower socio-economic neighborhoods have poorer health outcomes, partially because of systemic environmental conditions. The framework of this community engagement project is guided by Community Based Participatory Action Research to emphasize the value of community involvement in project development and implementation.



### **Acknowledgements**

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## **Chapter 1: Introduction**

This project will develop a community level public health primary prevention intervention to improve indoor air quality in the Rondo Neighborhood of Saint Paul, Minnesota. The goal is to decrease the prevalence of asthma and respiratory illness. Community members will create and implement the intervention. The intervention will be developed using the Healthy Homes framework.

This is not a research project, but rather a project based on the Community Based Participatory Action Research (CBPAR) method of working with community members to create positive change. Community involvement and self-determination of the project's goals, processes, and desired results is necessary for sustained awareness of environmental impact on health (Mardiros, 2001). Because of this, a community engagement process was chosen to facilitate a Healthy Homes initiative in the Rondo Neighborhood.

The author expects this project to increase community members' knowledge about the multiple factors present in homes and other indoor environments that decrease indoor air quality and increase the prevalence of asthma and respiratory illness. The increase in knowledge will engage, motivate and empower community members to work and advocate for improved indoor air quality to decrease respiratory illness and asthma.

### **Indoor Air Quality, Respiratory illness and Asthma**

There is a clear relationship between poor indoor air quality and respiratory disease. Indoor air pollution is estimated to cause thousands of cancer deaths and hundreds of thousands of respiratory deaths each year (Jacobs, Kelly, & Sobolewski, 2007).

The American Lung Association's State of the Air report (2011) states that Ramsey County, including Saint Paul, had over 8,000 cases of pediatric asthma; over 25,000 cases of adult asthma; over 16,000 cases of chronic bronchitis, and over 8,000 cases of emphysema in 2007-2009. There were more than 15,800 emergency department visits for asthma alone in 2006 in Ramsey County (American Lung Association, 2011).

The Minnesota Chapter of the American Lung Association sponsored a study (Carlson, Heins Nesvold & Liu, 2010) of asthma symptoms in children attending school in Saint Paul and Minneapolis. The study collected information from schools for three years - 2003, 2005 and 2007. The researchers concluded that children living in poverty in dense urban areas, especially children of color, were more frequently and more severely affected by asthma symptoms than the majority population (Carlson, Heins Nesvold & Liu, 2010). Asthma is the most common chronic condition among children (Asthma and Allergy Foundation of America, 2011).

Allergens or irritants that are inhaled into the lungs can cause asthma episodes (Asthma and Allergy Foundation of America, nd.). Asthma episodes are characterized by a temporary narrowing of the airways that transport air from the nose to the lungs. Symptoms include difficulty breathing, wheezing, coughing and tightness in the chest (Asthma and Allergy Foundation of America, nd.).

The United States Environmental Protection Agency states that environmental triggers are objects or pollutants that cause asthma symptoms. Triggers for asthma attacks and for people developing asthma, are: "secondhand smoke, dust mites, cockroaches, pets with fur or feathers, household pests, mold, household sprays, and nitrogen dioxide (from gas appliances)" (nd, p.20).

In the Rondo Neighborhood where this project will take place, the majority of the housing was built between 1890 and 1930 (J. Yannerelly, Environmental Health Program Supervisor, Saint Paul-Ramsey County Department of Public Health, personal communication, February 10<sup>th</sup>, 2009). Fifty-eight percent of the homes were built prior to 1940 (Wilder, 2004). There are many very large wooden houses that were originally single-family residences, but now they are multi family apartment units (J. Yannerelly, personal communication, February 10<sup>th</sup>, 2009). Sixty-nine percent of the housing in the Rondo area is renter occupied (Wilder, 2004). Renter occupied residences are frequently not as well maintained as owner occupied homes, especially if the rent is low.

Minnesota's weather pattern contributes to indoor air pollution because of the measures taken to maintain indoor air temperature at a comfortable level in a geographic location with widely variant temperatures. Minnesota has very cold winters, and hot, humid summers. It is difficult to heat and cool the large, wooden homes that dominate the Rondo Neighborhood. The author has noted families heating their homes in the winter by leaving the oven door open in the kitchen, which gives off nitrogen dioxide. Nitrogen dioxide is a by-product of gas and kerosene heaters, including gas stoves and ovens (US EPA, 2010).

The Wisconsin Department of Natural Resources states:

Humans exposed to high concentrations of Nitrogen dioxide suffer lung irritation and potentially lung damage. Increased respiratory disease has been associated with lower level exposures. Concentrations as low as 0.1ppm cause lung irritation and measurable decreases in lung function in asthmatics. (Wisconsin Department of Natural Resources, 2010, np.)

The author has observed that most of the homes she visited in the Rondo Neighborhood have forced air heat from a basement furnace. This style of furnace takes air from the basement, heats it and distributes it through the house. “Asthma triggers, irritants, pathogens, and other exposure risks that collect in damp basement air are then distributed into breathing air in living spaces” (Jacob, Kelly & Sobolewski, 2007). Additionally, the structural decay of poorly maintained old houses allows for a greater amount of vermin and insect infestations. Cockroaches and vermin dander trigger asthma attacks (Srinivasan, O’Fallon, Dearry, 2003).

“Socioeconomic status is the single greatest predictor of tobacco use,” according to the Partnership for a Tobacco Free Maine (Partnership for a Tobacco Free Maine, Maine CDC, 2008). Because of this, one might surmise that community members of the Rondo Neighborhood are more likely to smoke cigarettes. The City of Saint Paul states that the 2007 per capita income for Rondo neighborhood residents is between \$0-\$24,973.00 annually (City of Saint Paul, nd.). Cigarette smoke releases nitrogen oxide into the environment, which causes lung irritation and decreased function, especially in people with asthma (Wisconsin Department of Natural Resources, 2010).

The combination of the characteristics described above creates multiple risk factors for increased indoor air pollution. People living in the large, wooden multi family rental units in the Rondo Neighborhood may have a difficult time managing their asthma because they are inhaling the asthma triggers present in their homes. The entire neighborhood population, even those without asthma, are living in environments that present a high risk for respiratory illness due to poor indoor air quality.

## **Public health nursing and the environment**

For five years, the author's Public Health Nurse practice was based out of a Rondo Neighborhood office location. The work was home visiting newborn infants and their mothers over a period of a few months to a few years. Many of these families lived in the Rondo Neighborhood. The majority of the homes the author visited in the Rondo Neighborhood had broken windows, crumbling steps, dark hallways and insect and vermin infestations. It was apparent to the author that these substandard environments were negatively affecting client's health. However, it wasn't until learning about Healthy Homes and the writings of Florence Nightingale, that she realized it was within the scope and the responsibility of Public Health Nurses to advocate for better living environments for the people in the communities she served.

Florence Nightingale defined nursing as creating an environment conducive to maintaining health, preventing illness and healing from illness (Nightingale, 1947). Public health nurses must view advocating and improving their client's environment as part of their professional role. Currently, Public Health Nurse Home Visiting does not place priority on environmental factors (Hill, Butterfield, Kuntz 2010), because environmental issues have been considered outside of the scope of public health nursing (Krieger & Higgins, 2002). Florence Nightingale makes clear in her writings, however, that creating a healthy environment is central to the role of the professional nurse.

## **Healthy Homes Framework and its Development from Public Health's Success at Reducing the Prevalence of Childhood Lead Poisoning**

Healthy Homes is a national movement to holistically improve people's indoor and outdoor living environments. It provides a framework for public health nursing to



address the environment where clients live. The Healthy Homes initiative is based on the writings of Florence Nightingale (Galson, 2007) and provides the framework for this project.

A healthy home is designed, built, and maintained to support health.

CDC's Healthy Homes Program is a coordinated, comprehensive, and holistic approach to preventing diseases and injuries that result from housing-related hazards and deficiencies. (Centers for Disease Control, 2011, np.)

As a former supervisor of the childhood lead poison prevention program at the Saint Paul-Ramsey County Department of Public Health, the author is knowledgeable about lead poison prevention strategies in Minnesota. Children on Medical Assistance and living in areas known to be high in lead are given a blood test for lead at 12 and 24 months, ideally. The results of the test are sent to the Minnesota Department of Health. Children with positive results, meaning they have lead poisoning, are reported to local public health departments from the Minnesota Department of Health. Local public health departments manage the child's health according to a standard protocol. At the same time, Public Health nurses and environmental health workers locate and eradicate the source of the lead poisoning.

The source of the lead poisoning is often peeling lead paint in windowsills, porches and entryways of older homes. By eliminating the lead from the property, the lead free environment positively impacts a larger population than just the child with the current lead poisoning. No subsequent individuals will get lead poisoning from that source because Public Health has removed the source of the poisoning.

The success of this strategy is clear (Jacobs, Kelly, Sobolowewski, 2007).

In 1997, the percentage of children with confirmed blood lead poisoning in Minnesota was six percent; in 2006, almost three times as many children were tested, and the percentage was down to 0.72 percent (National Center for Environment Health, 2009).

Healthy Homes expands the successful strategy of reducing lead poisoning to encompass the home and community environment holistically, instead of concentrating on one toxin.

### **The Rondo Neighborhood of Saint Paul, Minnesota**

Prior to the 1960's, the Rondo neighborhood was a vibrant, vital African American community that was in many ways independent of the white society around it. In the early 1960's, freeway I-94 was built, effectively bisecting the neighborhood (Aurora/St. Anthony Neighborhood Development Corporation, nd). Placing freeway I-94 through this area displaced this community and its members.

This area was called Rondo because Rondo Avenue was the premiere African American business area of Saint Paul (Minnesota Historical Society, nd). Rondo Avenue no longer exists, but local residents still know and identify with the Rondo neighborhood's geographical boundaries and culture.

The Wilder Foundation (2004) found that forty percent of the residents are African American - an ethnicity highly affected by health disparities. The combination of the high prevalence of poverty, high population of people of African American ethnicity and high percentage of homes built prior to 1940, place its residents at high risk for decreased health because of environmental health factors (Jacobs, Kelly, & Sobolewski, 2007).

## **The Role of Public Health**

Public Health's purpose is to protect, maintain and improve the health of the community and the people in the community it serves. Public health interventions are designed to have an impact at system, community and individual levels. It is based in social justice and utilizes the science of epidemiology to examine the causes of health disparities that negatively affect the health of community inhabitants (Public Health Accreditation Board, 2010-2011).

It is the responsibility of Public Health, more than any other health care delivery system, to know the health trends of the community, analyze affecting factors and develop interventions to increase the health of community members (Public Health Accreditation Board, 2010-2011).

## **Project Members, Roles and Implementation Steps**

This project is inspired by CBPAR principles. CBPAR acknowledges that the people living in a community know the community's culture, assets and needs. Including people of the community in the project is both culturally sensitive and respectful (Dancy, Wilbur, Talashek, Bonner & Barnes-Boyd, 2004).

This project utilizes three teams. The teams are: 1) The author, a public health nurse (PHN); 2) the Advisory Group; and 3) the Action Team. Each team has its own role and responsibilities.

The PHN contributes the epidemiological information gathered and synthesized from published research and a community assessment. The PHN will also bring the knowledge of evidenced based Healthy Home interventions to frame the action plan.

The Advisory Group will serve as a conduit for the PHN to gain trust in the community. Because of the author's past professional work, she has relationships with Rondo Community leaders, including County Commissioners, City Council members and area social service and non-profit agency directors. These individuals will comprise the Advisory Group.

The Advisory Group members have knowledge about the community. They have community contacts that will be necessary to engage a larger group of community members for project design and implementation. They will be able to provide resources to the project. They also have the expertise to give the author and the action team guidance on the choice of project intervention. The Action Team will design and implement the project, using the information provided by the author and the resources and guidance of the Advisory Group.

The Action Team will consist of community members currently living in the neighborhood. Possible places to recruit Action Team members include youth mentoring programs at the local YWCA, students from a neighborhood community colleges or high schools, residents of area housing programs, civic groups like Kiwanis, Lions and Rotary, local church groups, and the Rondo Area Library.

This project will be carried out in the following steps:

- 1) The author, a public health nurse (PHN) will do an initial assessment to gather baseline data on the sources of indoor air pollution in the neighborhood.
- 2) The author will gather data on the prevalence of asthma in the neighborhood.

- 3) The author will condense this information into a policy brief and a health indicator map. It will convey the information in a manner so that it will be attractive and easily understood by non-healthcare professionals. The policy brief will include information about the relationship between poor indoor air quality and respiratory illness. The policy brief will also contain information on the triggers of asthma and the Healthy Homes interventions developed to improve indoor air quality by reducing the triggers.
- 4) The author will present the policy brief and the health indicator map to the community leaders she has worked with in the past on community projects. She will try to engage and enlist the community leaders by using the outreach tools created.
- 5) The individuals enlisted will form the Advisory Group. The Advisory Group will identify how to engage a larger group of individuals to be the Action Team.
- 6) The Advisory Group will mobilize and outreach to community agencies and form the Action Team. The Advisory Group will coordinate and attend planning sessions to give input and provide resources;
- 7) The Action Team will plan, design and implement the intervention;
- 8) The author will provide evaluation and initial data analysis
- 9) The author will synthesize and distribute the findings of this project.

## **Chapter 2: Literature Review**

There is significant research supporting the understanding that built environments, as defined as “the human modified places where we live, work, play, shop and more“ (Hood, 2005 p. A311) have a direct and measurable effect on health. Florence Nightingale understood and wrote about the relationship between ‘modified places’ and health. CBPAR research presents evidence that developing projects that aim to create a positive change in a community alongside community members is effective and sensitive to the community members. This literature review will expand on each of these subjects.

### **Environment and Health**

The literature reveals that deteriorating neighborhoods negatively affect the health of the inhabitants in complex and systematic ways. Substandard housing in low-socioeconomic neighborhoods is associated with increased “morbidity from infectious diseases, chronic illnesses, injuries, poor nutrition and mental disorders” (Krieger & Higgins, 2002, p. 758). It is suggested in the literature that the immune system may be adversely affected by living in an inadequate physical environment because of the associated stress (Srinivasan, Liam, et al., 2003).

Krieger and Higgins (2002, p. 759) write that in low socio-economic neighborhoods, there are neighborhood level effects on health – including “poor birth outcomes, cardiovascular disease, HIV, gonorrhea, tuberculosis, depression, inactivity and all-cause mortality.” There is a consistent association between increased crime rates and poor physical environment (Srinivasan, Liam, 2003).

According to Hood (2005) income segregation is the urban planning practice of placing housing for low-income people in areas not easily visible to the middle and upper

class inhabitants in a community. All of the articles reviewed and referenced above stated that income segregation is linked to poor physical and mental health outcomes.

Hood (2005) states the issue succinctly and clearly:

Low-income and/or ethnic minority communities – already burdened with greater rates of disease, limited access to health care, and other health disparities – are also the populations living with the worst built environment conditions. Studies have shown the negative aspects on health of compounding already distressing conditions (p. A312).

“Lower income generally means worse health. Racial or ethnic differences in health status are also evident. Poor or fair health is much more common among black and Hispanic adults than among white adults” (Robert Wood Johnson Foundation, 2008, p. 16). Housing and health disparities are tied closely together.

According to *Unnatural Causes* (2008) a person’s street address and zip code are very good predictors of the health of a person. It concludes that because of racial segregation and housing discrimination, there are neighborhood inequities in quality of life and it affects health. Pike-Paris (2008) states, “Children of minority ethnicity and lower income levels in America are disproportionately affected by a range of environmental health threats (p. 333). Health disparities are rooted in environmental, social and economic conditions and require community-based solutions (Krimgold, 2005).

### **Nursing Theory and Florence Nightingale**

Nightingale’s work at the Crimean Hospital for wounded soldier’s is well known. According to Beck (2010), Nightingale saved thousands of soldiers’ lives by cleaning up

the filthy environment of the hospital that greeted her when she arrived there. She did not save them through individual nursing care. She and her colleagues knew, through careful observation, that the environment the soldiers existed in was having negative effects on their health. By creating cleaner environs, the mortality rate at the hospital was decreased significantly (Willburn, 2007). Because she was a statistician and recorded her work, nurses have had the knowledge to understand the importance of incorporating environmental health into their practice (Willburn, 2007).

Nightingale (McDonald, 2006) was deeply grieved by the suffering she saw around her and believed that the care of those unable to perform self care due to mental illness, physical illness, cognitive delay or permanent disability should be shared by the community. McDonald (2006) writes that, when Nightingale discovered that the environment at the workhouses of her time was horrendous, she began to work for reform. She found people sick with contagious disease housed together with poor children, mentally ill people, elderly infirm people and other people unable to survive on their own. She believed that the people in the workhouses should be receiving the same care as those in the finest hospitals (Monteiro, 1985).

She wrote and campaigned for separating the population of the work houses into hospitals for the sick, nursing home like settings for the elderly and disabled, asylums for the mentally ill and mentally disabled, and schools for children (Monteiro, 1985).

She was able to garner support for her cause politically and financially, and the Metropolitan Poor Bill was adopted in 1867 (Monteiro, 1985). Remarkably, it was the first time taxes were used to provide services for the poor.



Much of the literature about nursing's involvement with environment credits Nightingale with giving nursing the knowledge that a person's environment has a great impact and that there is a causal relationship upon health and well being. Her best-known work, *Notes on Nursing*, (Nightingale, 1947; facsimile) provides nursing with advice on why and how to create an environment conducive to health and healing. She writes "and what nursing has to do in either case, is to put the patient in the best condition for nature to act upon him" (Nightingale, 1947; facsimile, p. 75).

Nightingale's theory as stated above – giving the patient the best surrounding conditions and environment - is essential to prevent disease and to aid nature in healing the affected. This is similar to the foundation that Healthy Homes is trying to build upon today.

Nightingale is regarded as the founder of modern nursing, but her definition of the mission of nursing: "Everyday sanitary knowledge, or the knowledge of nursing, or in other words, of how to put the constitution in such a state as that it will have no disease, or that it can recover from disease," (Nightingale, 1947, preface) is not widely known.

The mission of Nursing, according to Nightingale, is to support a person to be in an optimum position to maintain health, to prevent disease and to heal when ill.

Nightingale consistently emphasizes that a person or a community cannot maintain health, prevent disease or become healthier when their environment is unhealthy.

Beck (2010) writes that Nightingale developed the terms "sick-nursing" and "health-nursing" (p. 186). Both terms put the client in the best possible condition for nature to restore or preserve health (Nightingale, as cited in Beck, 2010). Nightingale is telling nurses to promote healthy environments everywhere.

The environment in hospitals should help people to recover from illness. Environments in the home and the community should assist people in maintaining their health and preventing them from becoming ill.

Nightingale explains that medicine has the job of removing obstructions that interfere with organ functioning (Nightingale, 1947, facsimile). This way of explaining the role of medicine is antiquated, but there is still truth in the statement. Medical professionals diagnose and prescribe. Nursing's role is to care for the entire person, including the environment, which is integral to preventing illness as well as restoring health. Therefore, nursing must pay attention to the environment. Public Health Nurses care for the community, so their nursing role is also to care for the environment in which community members reside.

In reviewing the literature about Florence Nightingale, the author has come to the conclusion that Nightingale's contribution to the development of Public Health and Public Health Nursing practice cannot be overstated. She is known, according to McDonald (2006) as the passionate statistician. She utilized epidemiological methods long before epidemiology was associated with Public Health nursing practice.

McDonald (2006) states Nightingale's methodology consisted of studying the best information available - especially government reports - asking experts in the field and acquiring first hand information. She did pilot testing using the material she developed and evaluated the interventions. She asked for opinions on her interpretations of the outcomes before further dissemination of the findings. Her Public Health methodology is still used today, and is especially pertinent in guiding the philosophy of this project.

Nightingale was an early promoter of community focused health education. (Beck, 2010) She was also an early promoter of including the people affected when trying to help them. She encouraged health officials and leaders to listen to the people they were attempting to treat (Beck, 2010). If Nightingale were alive today, she would be a powerful advocate of the Healthy Homes initiative, and of CBPAR.

### **Development of this Community Healthy Homes Project**

Dancy, (2004) notes that African American community members frequently distrust research and researchers. This is partly due to the famous “Tuskegee Syphilis experiment – an unethical, government-approved experiment that jeopardized the lives of poor African American men and their families” (p.235).

Dancy, et al, (2004) explains further that there is a history of research being done to African American communities where the researchers do not share the findings. Alternately, when they do share the findings, they do not provide accompanying recommendations to remedy what the study found, and the issue continues unresolved. “The prevailing approach of researchers coming into communities as the ‘outside experts’ has often resulted in disillusionment” (Dancy, et al., 2004, p. 235).

Because of the country’s history of slavery and still present racism, this is an especially important point to consider in the United States and for white people working in predominantly African American neighborhoods (Dancy, et al., 2004). Schmittiel, Grumbach & Selby (2010) state “CBPR emphasizes equitable partnerships and promotes the sharing of power, knowledge, and resources between investigators and research participants in all stages of research and application. This approach can be an important and successful strategy for public health improvement” (p.257).

CBPAR acknowledges that the people living in a community know the community's culture, assets and needs innately (Dancy, et al 2004). Including people of the community in the project and the research process, and having the researcher be in the position of learning about the community from community members, is more culturally sensitive and respectful than researcher as outside observer (Dancy, et al 2004).

The hope of CBPAR is to empower residents to understand the systemic causes and systemic responsibility for their own or their children's health. It is at least partially the result of our society's historical and present systemic discrimination, classism and racism against non-white people as well as white poor people (Dancy, et al 2004). The underlying causes may be best addressed by a community-wide focus (Giesbrecht & Ferris 1993).

Mardiros (2001) says CBPAR research engages in a "systematic, rigorous and sustained process of investigation in response to deep-seated, persistent, or extensive problems not amenable to known remedies" (p. 63). Community members decide the project agenda and control the resources that allow the project to be accomplished. The researcher becomes a resource person, facilitator and catalyst (Mardiros 2001).

CBPAR is often used to raise the consciousness of an effected community on a topic that effects community members (Loffman, Pelconen, Pietila 2004). This project would follow the CBPAR model to both raise the consciousness of the community on the relationship between health and environment, and to develop an action plan that would have an immediate as well as a lasting impact on the neighborhood's environment.

This project will utilize the flexibility of CBPAR (Loffman & Pelconen, et al. 2004). The project may vary in details and deliverables, within a given set of parameters,

during the course of the development and implementation, because it has to come from the people affected by the disparity. The author, the advisory group and the community action team all have the role of framing the vision or the goal of the project and then allowing those within the group to decide how to accomplish the vision.

In order for CBPAR to be effective, it must begin with a real need, from problems identified by the people who are facing them (Leung, 2005). This project consists of information gathering and community assessment using, as Nightingale did, government reports and other quantitative data resources. This project also includes meeting with community members, carefully listening to their identification of the needs and strengths in the neighborhood, deciding upon a practical project with willing participants, implementing the project and evaluating the outcome.

Community-based initiative programs are often not closely monitored or evaluated, and therefore what is learned from successful programs cannot be disseminated and replicated (Geisbrecht & Ferris, 1993). Having a stated results component as a part of this project will allow community members to embrace the project and interventions, while the author monitors progress and disseminates results (Geisbrecht & Ferris, 1993).

*The Surgeon General's Call to Action To Promote Healthy Homes* (Galson, 2009) is very informative and makes the case for the necessity of a public health, primary prevention initiative to create safer, healthier environments – indoor and outdoor. Kreiger & Higgins (2002) also make a compelling argument for public health to take action and improve living environments. Both of them recommend further research and action, however, they do not emphasize project development, intervention and

dissemination of outcomes in partnership with the people living in the affected communities. Until the people living in the affected communities understand the relationship between environment and health and gain hope that they can make a positive impact, the gains will be incremental (Mardiros, 2001).

After conducting this literature review, the author hopes that doing this project will help to create a grass roots movement in tandem with Public Health Nursing and other invested partners resulting in improvements of living conditions and community conditions to create better health. The project will be done to create a positive, sustainable, systemic change. Nursing may also use CPBAR to decrease the gap between academic nursing knowledge and practicing nursing knowledge (Lofman, et al. 2004).

The project follows many of the same engagement principles as CBPAR. Since this project's proposed outcomes are to create sustainable change in the environment and affect nursing practice, it is the right model for this project to emulate.

### **Chapter 3: Methodology**

This chapter discusses the development and implementation of the project using the framework of the Healthy Homes initiative and Nightingale's writings about environmental impact on health. The desired outcome is to decrease the incidence and severity of asthma and other respiratory illnesses in the Rondo Neighborhood by improving indoor air quality. Secondly, the author intends to increase community and individual knowledge of environmental affects on health. Lastly, the author intends to increase Public Health Nursing's awareness of their responsibility to improving living environments.

This community engagement project has its foundation in, and is inspired by Community Based Participatory Action Research, so it will utilize defining characteristics of this approach, which are: 1) it will work in partnership with members of the community and 2) it will work to solve a problem in the community.

To accomplish the goals of the project, the following steps will be performed:

An epidemiological assessment will be completed prior to the project being brought to the community. The goal of the assessment is also to find the significant indoor air quality health-related issues in the community and to identify and analyze the contributors to indoor health pollution health present in the community.

The author will review existing health statistics for the Rondo area. Resources for quantitative data will be the Local and State Health Departments, the Center for Disease Control, the Minnesota Hospital Association, the Kaiser Research Foundation, the Wilder Research Foundation and the American Lung Association. The American Lung Association office is located in the Rondo Neighborhood, and could be a substantial

source of assistance to this project. The author will also find and review morbidity and mortality rates, reasons for Emergency Room admittances, access to primary care clinics, the rates of preventive health screenings, the prevalence of very low birth weight infants and infant mortality, and any other related health statistics available for the Rondo Neighborhood.

The data gathered and analyzed in the assessment phase will be used to create a policy paper and a health impact map to show the environmental health factors present in the neighborhood. The policy paper will describe the impact the environment has on the asthma and respiratory illness status in the community. The health impact map will show the risks to indoor air quality in the area.

The policy paper and health impact map will be used when approaching potential members of the Advisory Group. Potential members include a variety of involved leaders and individuals that are part of agencies in the neighborhood, such as; the County Commissioner and City Council area representatives, the YMCA and YWCA, the Saint Paul Urban League, the Rondo Community Land Trust, Concordia College, Central High School, the Jimmie Lee Oxford Recreation Center, the Hallie Q. Brown Community Center and the Open Cities Health Care Center.

The author will present the policy paper and health impact map to potential members of the advisory committee. The presentation will include a concise description of Healthy Homes projects that have been successful elsewhere. The author will explain that it is elemental that the project be developed, implemented and evaluated by the involved community members.



The author will seek guidance from the potential Advisory Group members. The author would facilitate a discussion regarding neighborhood strengths, resources and needs, as well as projects that are currently being done or that have been done, and what challenges and successes have developed.

Once the Advisory Group has been formed, it will be responsible for several project development tasks. It will narrow the focus of the project and ensure the project has an obtainable goal, a beginning and an end.

After the Advisory Group has developed some potential interventions, Community Action Team member recruitment will begin with input and assistance from all Advisory Group members to approach and engage potential participants.

At the first meeting with the Advisory Group and the Action Team, the author will explain the relationship between environment and health and the findings of the health assessment done in their neighborhood. The author will also introduce the Healthy Homes framework at this meeting.

The author would plan this meeting with County Commissioner Toni Carter, who will be a member of the Advisory Group. The author will ask Commissioner Carter to facilitate a conversation after the author has presented. The author has worked with Commissioner Carter on community projects in the past. She is a skilled facilitator. She will be able to ensure everyone attending is able to state his or her opinion. She will also be able to keep the conversation focused on the subject at hand. Community members will be encouraged to contribute their opinions and ideas.

The Action Team, as community members, will select the most effective actions to serve their own community and will develop the actual action. Possible projects might

include 1) an educational forum with supplies given to assist the attendees in creating healthier indoor air, such as: non-toxic cleaning supplies, non-toxic pest elimination supplies, carbon monoxide detectors, furnace filters, 2) create a portable model “healthy home” focused on how to reduce asthma triggers in a house to be used at different neighborhood events for education, and 3) create a photovoice display for future neighborhood advocacy work. The display would show pictures of the neighborhood’s environment and some of the risk factors to people with asthma that are in the environment.

The author will discuss that all community members are equal and valued project stakeholders, and will ask them to comment and give feedback upon the analysis of the project. She will place emphasis on asking them to correct her conclusions and proposed analyses if they believe it is suspect, the interpretation is culturally biased, or input is misinterpreted because she isn’t a member of their community.

It will be very important for the meeting facilitator to communicate to the community members that their input is always valued and welcome. The Advisory Group is made up of community leaders, and this may intimidate other community members from participating. The leaders may not have the same experience as other community members. For instance, a Central High School student may not have the same experience living in the neighborhood as a Ramsey County Commissioner.

All members must reach consensus about the issue and the intervention. All meetings will be carefully recorded, either by notes or by electronic recording. Since the outcome of this project is not only to create one finite project in the neighborhood, but to continue working for environmental improvement and to contribute to the Public Health

knowledge base, the author views these meetings as important data gathering opportunities.

At the Advisory Group and Action Team meetings, a specific project(s) will be developed and then implemented. Details and specific attributes of each item on the action plan may evolve as they are developed based on the Action Team's contribution. This is encouraged and expected.

Each part of the project will have a predetermined completion point and measures to determine effectiveness (eg. number of community contacts, materials distributed). This asthma project will conclude at the completion of the actions implemented by the community partners.

The author will gather data all along the way and will write up the findings after the conclusion of the project. He or she will include community and advisory members as co-authors as she documents activities, outcomes and conclusions from the gathered data. The data may provide knowledge about the community that was previously unknown to non-members of the community. This information could be helpful in developing public policy advocacy for the neighborhood.

The author's role will be to bring her public health nursing knowledge and CBPAR expertise to the group. She will keep the group up to date with data analysis, and ask for feedback and assistance in understanding and drawing conclusions from the data. Throughout the process, the author will keep notes, journal entries, documentation of meeting conversations and participant community reactions. This will be the data used for compilation and analysis of the project. After the Action Team has implemented the intervention, the researcher will conduct a meeting with the Action Team and Advisory

Group. At this meeting the author will express her gratitude to the participants and we will celebrate the completion of the action part of the project. The author will ask Commissioner Carter to facilitate a conversation about the successes and challenges of the project. The debriefing conversation will be documented and analyzed for evaluation purposes.

### **Limitations of Project**

One limitation of this project is that it focuses on one group doing an intervention at one point in time. The results can be evaluated and built upon for further work with the same group or in the same neighborhood, but the findings can't necessarily be generalized to other situations. No theory will be developed from this project.

The other limitation is the lack of resources available for the project. The project meetings and events may be less well-attended, and/or have less of an impact than if there were ample resources available to create a healthier home environment for the participants, such as plastic mattress covers for people with asthma, HEPA vacuum cleaners, furnace filters and repair services, or any number of interventions that might be defined by the Advisory Group and Community Action Team. Funding is always an issue for Public Health programs, and this project will need to locate and leverage resources from any number of funding sources to achieve success. Project activities may need to be tailored or scaled back to the available funds, which can affect the results.

As a facilitator of the meetings, the author will ensure that all attendees are treated respectfully and opinions are given equal consideration. The facilitator will pay attention to contradictory viewpoints from the participants, as they can often be opportunities for insights.

The author will also protect the participants by respecting the wishes of those that don't wish to be a part of the group. The group must be in agreement about the principles guiding the intervention. All planning and development must be known by all members of the group (O'Brien, 2001).

### **Challenges**

There are challenges to community participation in public health projects. It takes a significant amount of time to do the community organizing necessary to get people willing to commit to the project. It also takes more time to include all members in discussions on project direction decisions. There is not a defined method of data gathering or data analysis that accompanies this type of project. One of the weaknesses noted by Lofman, (2004) in many of the published CBPAR studies, is that the community members are not included as a part of the research team. The author will seek feedback on emerging project themes to ensure she is understanding and evaluating them from the point of view of the community members. Despite these challenges, a community participatory public health project is an appropriate method of choice for the problems this project is attempting to address for several reasons. It is more respectful and sensitive to the community member's culture than other types of intervention. A positive change in the neighborhood done by the people living in the neighborhood will have a better chance at sustainability and catalyzing more projects. Lastly, knowledge of home and community environment, and of the impact the environment has upon health stays in the community. These outcomes address core principles of both Healthy Homes and Public Health.

## **Chapter 4: Discussion**

The purpose of nursing is to care for clients. Public Health nursing expands the definition of client to include caring for communities and systems, as well as individuals. This chapter will discuss the impact this community based participatory project will have on nursing as a whole. It includes the author's reflection of the project and the influence on her Public Health Nurse Practice.

### **Impact on Nursing**

The process of conducting this project and disseminating the findings would impact nursing at the individual, community and system level. The following paragraphs illustrate how each level would be affected.

Individual nursing will be impacted by the dissemination of the community participatory project model. It will increase nursing's knowledge about the significant impact environments have on health. The author hopes the increase in knowledge about environment and health will encourage clinic and hospital nurses to increase their collaboration with Public Health nurses. Public Health and institution-based nurses benefit from working together to develop effective individual interventions that are achievable by the client in their home environment. Both Public Health nurses and institution-based nurses find it difficult to find time for collaboration. However, if a care plan is developed for a client that includes environmental interventions as well as pharmaceutical, medical and physical interventions, it could save nursing time. As an example, when there is Emergency Room admittance for an asthma episode, after the client is treated and is stable, the client is asked to sign a release to Public Health before he is discharged to home.

The ER nurse transmits the release with a short description of the episode, and a summary of the instructions the client received to the local Public Health department. The Public Health nurse would then make a home visit and work with the client to alleviate environmental asthma triggers. The Public Health nurse would also review the instructions the client received at the ER with the client and make sure the client understands what they were told. This could reduce that client's ER re-admission likelihood. There is the potential of considerable cost savings here, considering the cost of a Public Health nurse visit in the home compared to an ER visit. More importantly, there could be a considerable increase in the client's health and wellbeing. Asthma episodes are surely a frightening experience. Panic is a normal reaction to not being able to get enough air to breathe. Being able to reduce the frequency of episodes by reducing asthma triggers in the environment and taking medications as directed would increase the client's quality of life.

Also, the increase in knowledge of the community participatory project process will create increased awareness of developing behavioral interventions in partnership with the client communities. The author has noted that nurses often voice frustration when a client's behavior, doesn't change, even when the nurse thinks the client understands they need to change in order to improve the health condition. For example, a nurse who has conducted a careful and effective health education session with the parents of a child who is frequently brought to the emergency room for acute asthma attacks can be frustrated when that child is re-admitted to the ER and smells of cigarette smoke a short time later. Using the knowledge she gained from the project's findings, the nurse would explore the source of the cigarette smoke and follow up appropriately, whether it

is a neighbor who is smoking, or the child's parents. She now has an understanding of the importance of the client's home environment on his or her health, as well as the knowledge that there are factors that have a negative effect on health that can be beyond the control of the individual or their family.

Another example of the community level impact on nursing would begin when the emergency room nurse makes a referral to the Public Health Department to have a Public Health Nurse (PHN) case manage and advocate for the child with asthma. The PHN assigned could refer the patient family to a non-smoking apartment building in the neighborhood that the family could afford. Alternatively, the PHN can problem solve with the family and the landlord to improve the child's environment by reducing his exposure to second hand smoke.

Individually focused interventions by the PHN are a first line of intervention, but deeper levels could be accomplished. Because of the dissemination of the results of this project, the PHN recognizes the unmet need in the community for smoke free housing. The PHN is also empowered by the reuniting of Public Health Nursing and the work of Florence Nightingale to address the child's environment instead of feeling hopeless, as the author had for years when visiting young families in decrepit housing units.

This project has laid groundwork and gives the nurse a framework for addressing an unmet need by collaborating with community members. She could reach out to the community and begin a project to address the lack of smoke free environments in the neighborhood.

This project would also have a nursing impact at the systems level. Community member's knowledge of the relationship between environment and health is increased, as



well as their knowledge of avenues for change. The increase in knowledge combined with the increased sense of ownership and empowerment will change community norms. Using the smoking scenario, neighborhood residents could work with their political representatives and the local public health department to create policy and introduce legislation to regulate smoking in public areas, decrease access to tobacco products and decrease tobacco advertising in their neighborhood.

The change in policy, codes and legislation would eventually create a change in community norms, which is the desired result of a systems level PHN intervention. An example of a community norm change would be if a parent is in the playground with her children and she successfully asks a person about to light a cigarette to not smoke where her children are playing. She would not be afraid to ask, and she would most likely get cooperation, because smoking in public areas is no longer an acceptable community act.

### **Conclusion**

The knowledge gained by reading Florence Nightingale's writings and her impact upon Public Health Nursing during the course of this project has had a profound influence on the author's public health nursing practice. Nightingale wrote, "I use the word nursing for want of a better. It has been limited to signify little more than the administration of medicines and the application of poultices" (Nightingale, 1947, facsimile, p.6). Nursing continues to emphasize "administration of medicines and the application of poultices" today. Nightingale wanted Nursing to "signify the proper use of fresh air, light, warmth, cleanliness, quiet, and the proper selection and administration of diet – all at the least expense of vital power to the patient" (Nightingale; facsimile 1947,

p. 6). It is important of course to be accurate and competent when giving medicine to a patient or when dressing a wound. However, Nightingale directed nursing to consciously create an environment supportive to health. Unfortunately, today this foundational meaning of nursing is rarely thought of as an important nurse practice.

Florence Nightingale was a statistician as well as a nurse. Her work would have gone unknown if she hadn't combined her statistics with her assessments and evaluation and written about her outcomes. Her work created evidence for nurse practice, and provided a very early lesson for nursing about documenting assessments, process and outcomes. Nursing still struggles to evaluate its processes and outcomes.

Her contribution to the elevation of Nursing to professional status cannot be overstated. Paying homage to her, but not including what she directed nursing to do is an insult to her legacy. Nursing would be further advanced in defining itself, taking its just place in the continuum of health care professionals, and contributing to healing and health, had it remained true to her definition of Nursing.

## **Reflection**

The Rondo neighborhood is full of homes that were once prominent, but are now run down. Stores, and other places of business, have bars on their windows and are distinctly different than the stores just blocks away in the affluent Summit/Grand neighborhood of Saint Paul.

The author has worked for years with young families living in deplorable conditions in the Rondo Neighborhood. She has often sat with new mothers while they hold their newborn baby. The love they have for their child is the love that is shared by all mothers. She wants the best for her child. She wants her child to be safe, to be

healthy, to have enough food, and to grow up to fulfill his potential. The mother knows innately, because she has experienced it, that her child is born with greater obstacles and challenges to overcome in order to fulfill his potential than his counterpart born in the middle or upper socio-economic class.

The Call to Healthy Homes by the Surgeon General gave the author hope and a framework to address the environmental and housing inequities that negatively affect the health of the people living within. While doing this paper, the author learned of the systemic cause and believes it is a societal responsibility to improve the environment for these families. Because of her engagement in this work, a paradigm shift occurred in the author's thinking on health. It is impossible now for the author to not consider the environment and the systemic reasons for ill health, and to consider possible projects for improvement. All nursing must consider environmental factors that affect health and purposefully work to create healthier living environments conducive to the maintenance of health, prevention from ill health and recovery from illness when it occurs.

The concept of direct and respectful participation with community members to affect and direct improvements in their own environment at the grassroots level is a noble and potentially more effective approach than programs solely administered and delivered at the state or county level. As a Public Health Nurse, the author hopes to apply this concept whenever possible for a number of environmental factors within our client communities

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